U.S. FOOD & DRUG ADMINISTRATION

2023 FDA Update

14th Annual PRO Consortium Workshop

April 19, 2023

Agenda

- Introductions
- Clinical Outcome Assessment (COA) Qualification Program
- Medical Device Development Tools (MDDT) Program
- Patient-Focused Drug Development Update
- Accelerating Access to Critical Therapies for ALS Act
- Methodological Topics of Interest
- Panel Discussion with Q&A

Agenda cont.

- Methodological Topics of Interest
  - Computerized Adaptive Testing (CAT)
  - Diversity and Inclusion
  - Collection of PRO Data from People Who Have Visual Impairments or Are Unable to Read
  - Use of Social Media for Data Collection
  - Anchor-based Approach: Does One Size Fit All?

Panelists and Speakers

- **Robyn Bent**, Director, Patient-Focused Drug Development, CDER
- **Selena Daniels**, Team Leader, Division of Clinical Outcome Assessment, OND|ODES, CDER
- **Lili Garrard**, Master Mathematical Statistician, Division of Biometrics III, Office of Translational Sciences, CDER
- **Laura Lee Johnson**, Director Division of Biometrics III, Office of Translational Sciences, CDER
- **Jessica Mavadia-Shukla**, Program Director, Medical Device Development Tools, Office of Strategic Partnerships & Technology Innovation, CDRH
- **David Reasner**, Division Director, Division of Clinical Outcome Assessment, OND|ODES, CDER

Panel Moderator

- **Michelle Campbell**, Associate Director, Stakeholder Engagement and Clinical Outcomes, Office of Neuroscience, Office of Neuroscience, CDER

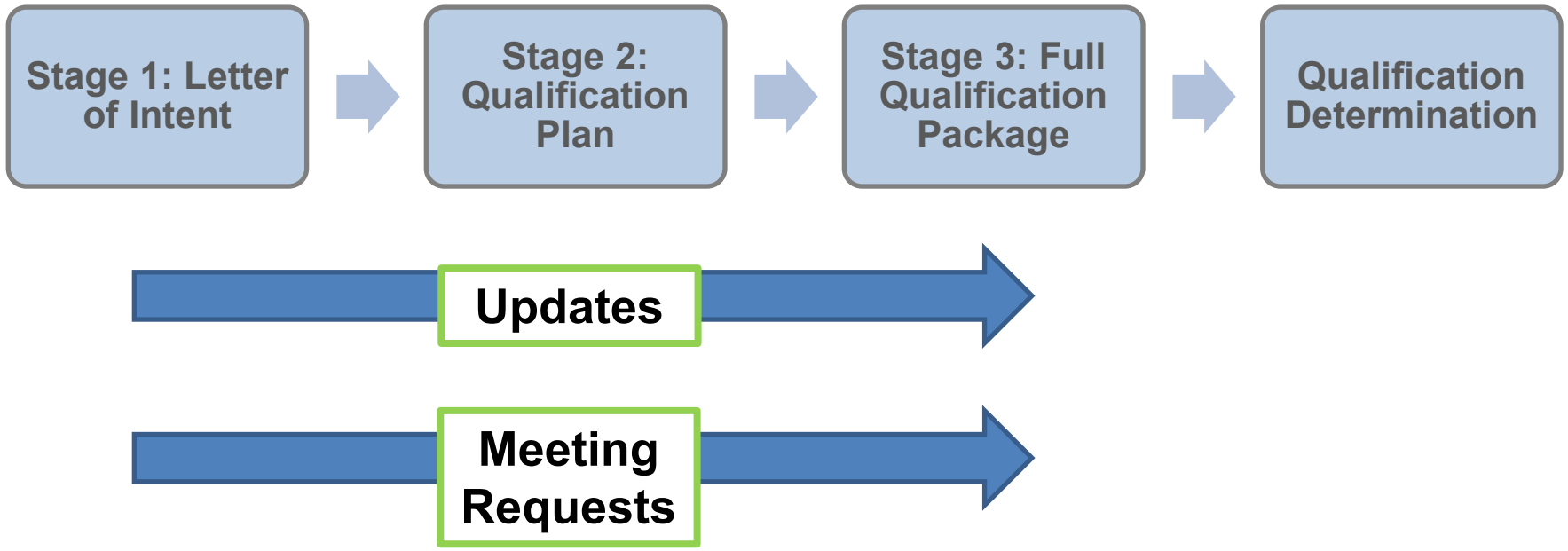
COA DDT QUALIFICATION PROGRAM

COA DDT Qualification Program (COA QP)

- COA QP - Stages & Timeframes
- COA QP - 2022 Metrics
- COA QP - Resources

COA QP Stages & Timeframes

DDT Process:
COA Qualification Stages



Each of the three milestone submissions should be a stand-alone package.

DDT Process: COA Qualification Timeframes

Qualification Stage	Timeframe
Letter of Intent (LOI)	3 months (calendar days)
Qualification Plan (QP)	6 months (calendar days)
Full Qualification Package (FQP)	10 months (calendar days)

CDER conducts a reviewability assessment, and the review begins when a reviewable memo issues.

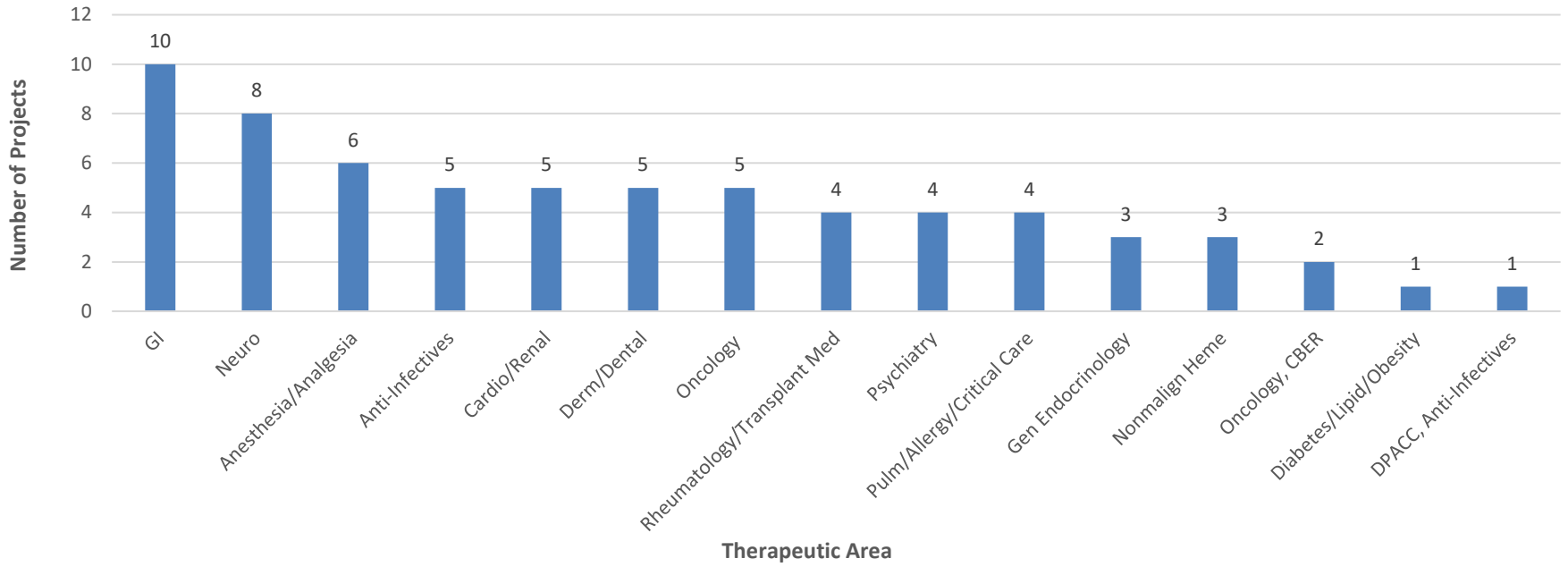
COA QP 2022 Metrics

Number of COA QP Projects

- As of April 10, 2023, the total number of projects in the program totaled 66

- Accepted 1 LOIs between 1/1/23 – 4/10/23
  - Pre-LOI Meetings, LOI revisions, and restarting (or withdrawing) existing DDTs

COA DDT Projects by OND Clinical Review Divisions



DDT Projects by COA Type - 2022

COA Type	Number
PRO Measures	42
Other*	9
PerfO Measures	6
ClinRO Measures	4
ObsRO Measures	3
PRO/ObsRO	1
Multi-Component COA	1

*Digital Health Technologies (DHTs) not falling into other categories (e.g., activity monitors)

Number of 2022 DDT Submissions

Type	Number (2018)	Number (2019)	Number (2020)	Number (2021)	Number (2022)
Letter of Intents (LOIs)	10	18	22	7	5
Qualification Plans (QPs)	2	8	15	10	6
Full Qualification Packages (FQPs)	2	0	2	2	1
Updates	13	9	9	13	3
Meeting Requests	7	5	10	13	2

COA QP 2023 Resources

COA DDT Research Grants Update

- 1 COA DDT Research Grant was awarded in FY2022, and 1 was deferred
- Application due date: **May 3, 2023**
  - Funding opportunity announcement: **PAR-21-178**
  - **Update:** We will accept grant applications as long as your DDT submission (LOI or QP) is deemed reviewable by the grant deadline.
  - CDER-DDTGrantsContracts@fda.hhs.gov

We are Hiring!

Looking for qualitative and quantitative social science and clinical analysts

LinkedIn: https://www.linkedin.com/jobs/view/3570421544
ISPOR: https://careers.ispor.org/link.cfm?c=WqflGPGBWwEw

Email CV to DCOA@fda.hhs.gov and cc David.Reasner@fda.hhs.gov

FDA U.S. FOOD & DRUG ADMINISTRATION

CDRH Medical Device Development Tools (MDDT) Program

Jessica Mavadia-Shukla, Ph.D.
Program Director, Medical Device Development Tools
PAIRS/DARSS/OST/CDRH

MDDT Program

- ***Pathway*** to evaluate regulatory tools (e.g., performance measures and models, biomarker tests, or clinical outcome assessments)

Qualification

- FDA conclusion that within the qualified context of use, the tool can be relied upon in medical device development and regulatory review
- A qualified tool becomes a Medical Device Development Tool, or MDDT

Objectives

- Leverage advances in regulatory science
- Reduce time and resources for Medical Device Development

MDDT Program qualifies tools to advance regulatory science

Clinical Outcome Assessment

Assessment of a clinical outcome reported by a clinician, a patient, a non-clinician observer or through a performance-based assessment.

Biomarker Test

A defined characteristic that is measured as an indicator of normal biological processes, pathogenic processes, or biological responses to an exposure or intervention, including therapeutic interventions.

- *e.g., measures of molecular, histologic, radiographic, or physiologic characteristics.*

Non-clinical Assessment Models

A non-clinical test model or method that measures or predicts device function or in vivo device performance.

- *e.g., computational models, animal models, phantoms.*

Examples of MDDTs

CDRH has Qualified 6 COAs all of which are PROMs through the MDDT Program

Face-Q | Aesthetics

- Qualified 4/26/2022

Patient-Reported Outcomes with LASIK Symptoms and Satisfaction (PROWL-SS)

- Qualified 6/17/2021

Breast-Q Reconstruction Module

- Qualified 8/20/2020

Insulin Dosing Systems: Perceptions, Ideas, Reflections, and Expectations (INSPIRE) Questionnaires

- Qualified 6/24/2020

Minnesota Living with Heart Failure Questionnaire (MLHFQ)

- Qualified 3/19/2018

Kansas City Cardiomyopathy Questionnaire (KCCQ)

- Qualified 10/19/2017

Proposal Phase	Qualification Phase
1) Determine eligibility of MDDT based on ability to facilitate regulatory decision making. 2) Review of **Qualification Plan** with qualification criteria and plan for collecting & gathering evidence in support of proposed and context of use.	1) Evaluate the strength of evidence in **Qualification Package** to determine whether qualification criteria were met and whether the tool is fit for purpose for the proposed context of use. 2) Qualify tool if the evidence supports the proposed context of use.

MDDT Qualification Process & Evaluation

Key Content to include in the Proposal Package

Description of the tool

- Concept of Interest
- Method and mode of measurement

Context of Use Statement

- Use within regulatory submission
- Specific endpoints, timing of assessments, etc.

Qualification Criteria

- Measurement properties (reliability, meaningful change, etc.)
- Scientific justification for strength of evidence collected to support qualification

Summary of Evidence Plan to Support Qualification

- Methods
- Validity evidence to be collected
- How validity evidence are related to COU

Key Content to include in your Qualification Package

Description of the tool

- Concept of Interest
- Method and mode of measurement

Context of Use Statement

- Use within regulatory submission
- Specific endpoints, timing of assessments, etc.

Qualification Criteria

- Measurement properties (reliability, meaningful change, etc.)
- Scientific justification for strength of evidence collected to support qualification

Evidence to Support Qualification

- *COA Dossier*

DHCoE Priorities to Support the Use of DHTs in Clinical Investigations of Medical Products

Promoting a Patient-Centered Approach With a Focus on Health Equity

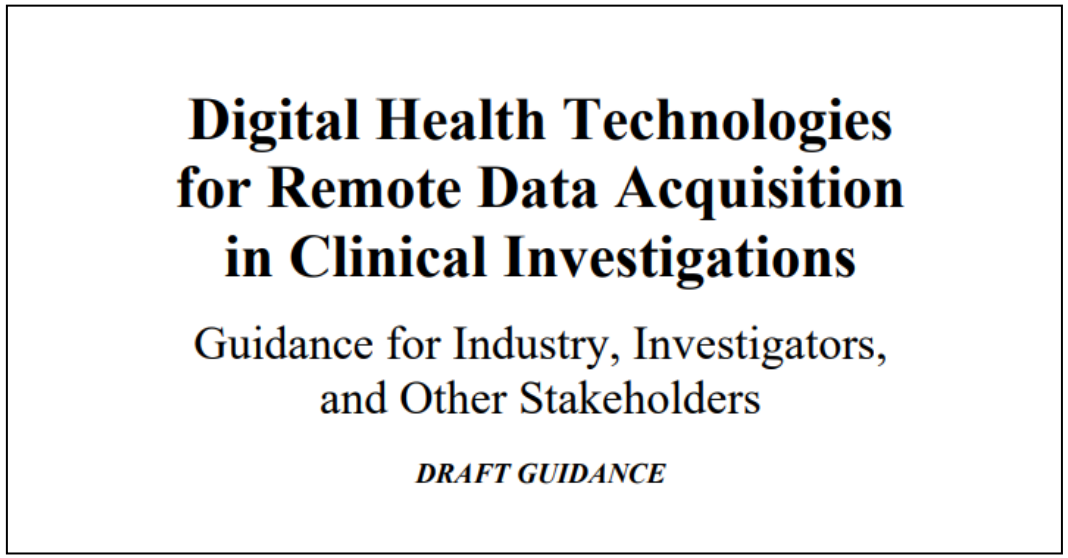
Ensuring Technologies are Fit-For-Purpose for Clinical Applications

Providing Regulatory Clarity and Predictability

Supporting a Least Burdensome Approach

Providing Regulatory Clarity and Predictability

We welcome and appreciate your feedback!



More than 600 comments received from a broad set of stakeholders

- Scientific and academic experts
- Patient and consumer advocacy groups
- Private citizens
- Third-party payors
- Regulated industry
- Legal/ regulatory experts
- Pharmacists

Helpful Resources

Medical Device Development Tools Program

MDDT@fda.hhs.gov

CDRH Patient Science and Engagement Program

CDRH_PatientEngagement@fda.hhs.gov

Digital Health Center of Excellence

digitalhealth@fda.hhs.gov

Patient-Focused Drug Development

April 2023

Robyn Bent, MS,RN
Patient Focused Drug Development
Center for Drug Evaluation and Research (CDER)

Updates on Selected PFDD Efforts

- Patient-Focused Drug Development
  - Upcoming PFDD Meetings
- PFDD Guidance Documents
- Standard Core Clinical Outcome Assessment and Endpoints Grant Program
- PDUFA VII

Condition-Specific Meeting Reports and Other Information Related to Patients' Experience

- https://www.fda.gov/industry/prescription-drug-user-fee-amendments/condition-specific-meeting-reports-and-other-information-related-patients-experience

Disease or Condition (alphabetical)	Type of Meeting	Resource(s)	Meeting Date
Acromegaly	EL-PFDD Meeting *Host: Acromegaly Community, Inc.*	Meeting Report	January 21, 2021
Acute Porphyrias	EL-PFDD Meeting *Host: American Porphyria Foundation*	Meeting Report	March 1, 2017
Adrenomyeloneuropathy (AMN)	Patient Listening Session	Patient Listening Session Summary	May 7, 2021
Adult Dermatomyositis	Patient Listening Session	Patient Listening Session Summary	April 26, 2022
Adult Polyglucosan Body Disease (APBD)	Patient Listening Session	Patient Listening Session Summary	October 28, 2021
Alopecia Areata	FDA-led PFDD Meeting	• Agenda • Slides • Recordings (Part 1, Part 2) • Transcript • Summary Report	September 11, 2017
Alpha-1 Antitrypsin Deficiency (AATD)	FDA-led PFDD Meeting	• Agenda • Slides	September 29, 2015

Upcoming Externally-Led PFDD Meetings

To promote transparency and communication, FDA is sharing a list of disease areas where a letter of intent (LOI) has been submitted and ongoing plans exist for a future Externally-Led PFDD meeting. While multiple organizations may be working together, the organizations listed below are the primary points of contact for any questions regarding their EL-PFDD meeting.

FDA does not conduct Externally-Led PFDD meetings and a listing on this webpage does not reflect endorsement.

Content current as of:
04/13/2023

Regulated Product(s)
Drugs

Disease or Condition	Organization Submitting LOI	Organization Contact	Anticipated Meeting Date
Arrhythmogenic Right Ventricular Cardiomyopathy/Dysplasia (ARVC/D)	SADS Foundation	Alice Lara alice@sads.org	June 20, 2023
Prader-Willi Syndrome (PWS)	PWSA | USA	Dorothea Lantz dlantz@pwsausa.org	June 22, 2023
Autosomal Recessive Polycystic Kidney Disease (ARPKD)	PKD Foundation	Elise Hoover eliseh@pkdcure.org	August 29, 2023
Hypermobile Ehlers-Danlos Syndrome (hEDS) and Hypermobility spectrum disorders (HSD)	The Ehlers-Danlos Society	Oumaima Nehaili Oumaima.Nehaili@ehlers-danlos.com	October 31, 2023
Polycystic Ovary Syndrome (PCOS)	The National Polycystic Ovary Syndrome Association (PCOS Challenge)	Sasha Ottey sottey@pcoschallenge.org	November 3, 2023
Kidney Xenotransplantation	National Kidney Foundation	Heather Murphy heather.murphy@kidney.org	November 9, 2023

Upcoming FDA PFDD Meeting

APRIL 25, 2023
(Next Tuesday)
10am-4pm ET

VIRTUAL

Public Meeting on Patient-Focused Drug Development for Long COVID

APRIL 25, 2023

Share | Tweet | LinkedIn | Email | Print

On This Page

- Meeting Information
- Event Materials

Date: April 25, 2023
Time: 10:00 AM - 4:00 PM ET

Attend

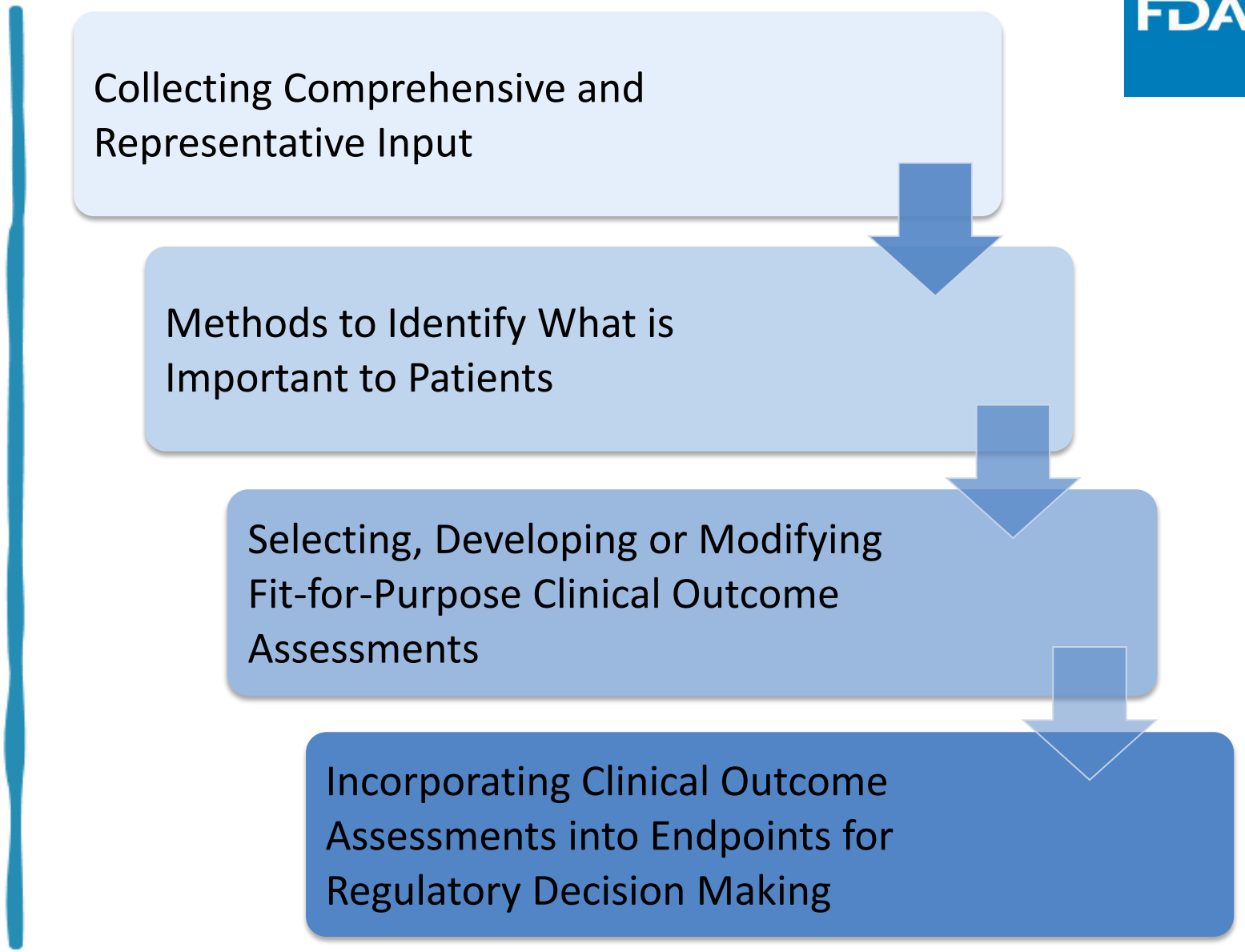
Register for This Event

Español

On April 25th, 2023, FDA is hosting a virtual public meeting on Patient-Focused Drug Development for Long COVID. This meeting will provide FDA the opportunity to obtain initial patient and patient representative input on the aspects of Long COVID, including how Long COVID affects their daily life, symptoms that matter most to patients, their current approaches to treating Long COVID, and what they consider when determining whether or not to participate in a clinical trial. This virtual public meeting will be conducted with live translation in both English and Spanish.

This website will be updated as meeting materials are developed.

Methodologic Guidance Documents



https://www.fda.gov/drugs/development-approval-process-drugs/fda-patient-focused-drug-development-guidance-series-enhancing-incorporation-patients-voice-medical

PFDD Guidance 1: Collecting Comprehensive and Representative Input

- Whom do you get input from, and why?
- How do you collect the information?

Status:

- Workshop held on December 18, 2017
- Issued Draft Guidance in June 2018 and Final Guidance in June 2020

PFDD Guidance 2: Methods to Identify What is Important to Patients

- What do you ask, and why?
- How do you ask non-leading questions that are well-understood by a wide range of patients and others?

Status:

- Workshop held on October 15-16, 2018
- Issued Final Guidance in February 2022

Guidance 1
Guidance 2
Guidance 3
Guidance 4

PFDD Guidance 3: Select, Develop or Modify Fit-for-Purpose Clinical Outcome Assessments

- How do you decide what to measure in a clinical trial and select or develop fit-for-purpose clinical outcome assessments (COAs) ?

Status:

- Workshop held on October 15-16, 2018
- Draft published in June 2022

Guidance 1

Guidance 2

Guidance 3

Guidance 4

PFDD Guidance 4: Incorporating Clinical Outcome Assessments into Endpoints for Regulatory Decision Making

- Once you have a COA measurement tool and a way to collect data using it, what is an appropriate clinical trial endpoint?

Status:

- Workshop held on December 6, 2019
- Draft published in April 2023

Guidance Snapshot, Podcast, and Webinar

Patient-Focused Drug Development Guidance Snapshot

- Snapshot of *PFDD G3* helps readers understand the highlights of the recommendations in the guidance
- **https://www.fda.gov/media/159516/download**

Patient-Focused Drug Development Guidance Podcast

- Subject Matter Experts talk about the importance of the document
- **https://www.fda.gov/media/159508/download**

PFDD G3 Webinar

- Provides a walkthrough of the G3 guidance.
- Includes examples from industry on how they think they will apply the guidance.
- **https://www.fda.gov/drugs/news-events-human-drugs/public-webinar-patient-focused-drug-development-selecting-developing-or-modifying-fit-purpose**

Upcoming Webinar

https://www.fda.gov/drugs/news-events-human-drugs/public-webinar-patient-focused-drug-development-incorporating-clinical-outcome-assessments-endpoints

VIRTUAL

Public Webinar Patient-Focused Drug Development: Incorporating Clinical Outcome Assessments into Endpoints for Regulatory Decision Making – Draft Guidance

MAY 4, 2023

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On This Page

- Meeting Information

Date: May 4, 2023

Time: 1:00 PM - 3:00 PM ET

Attend

Register for This Event

On May 4, 2023, the U.S. Food and Drug Administration (FDA) is hosting a webinar for patients, industry, and other interested stakeholders to discuss and answer questions about the draft guidance: Patient-Focused Drug Development: Incorporating Clinical Outcome Assessments into Endpoints for Regulatory Decision Making.

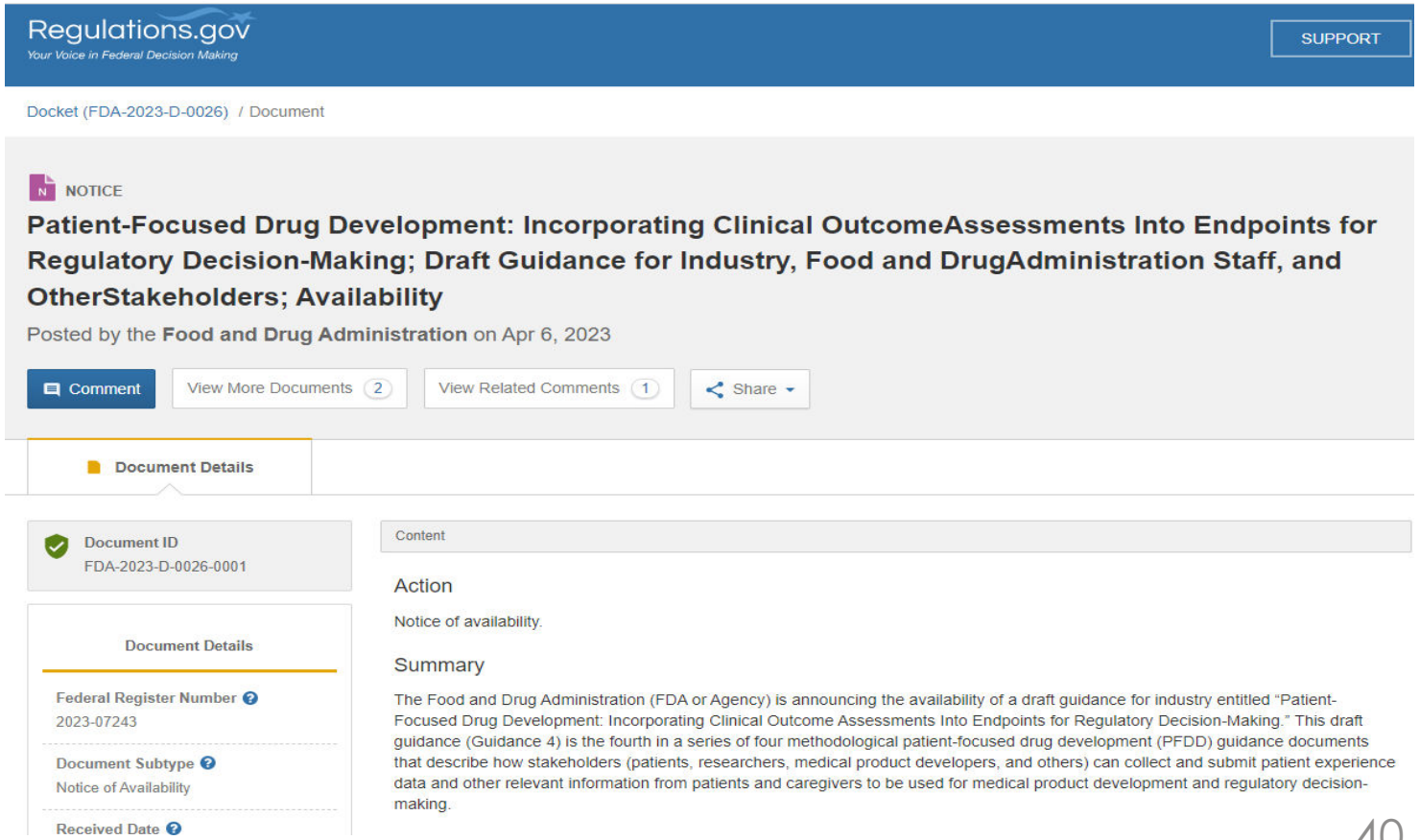
Send us your comments!

Interested stakeholders are invited to submit comments on the draft guidance to the public docket.

The docket will close on July 5, 2023.

How do you submit a comment?

- Please visit: https://www.regulations.gov/document/FDA-2023-D-0026
- And **Click Comment**



Standard Core COA Grant Program

- **Goal:** Enable development of standard core sets of measures of disease burden and treatment burden for a given area or across therapeutic areas —that would be made publicly available at nominal or no cost
- Currently funding 5 grants:
  - **Migraine** Clinical Outcome Assessment System (MiCOAS)
  - Clinical Outcome Assessments for **Acute Pain** Therapeutics in Infants and Young Children (COA APTIC)
  - Northwestern University Clinical Outcome Assessment Team (NUCOAT) – **Physical Function**
  - Preparing a Clinical Outcomes Assessment Set for Nephrotic Syndrome (Prepare-NS)- **Fluid Overload**
  - Expanding the Observer-Reported **Communication** Ability (ORCA) Measure

PDUFA VII PFDD Commitments

1. Training and Outreach
   - Internal
   - External
2. Identifying and Addressing Methodologic Issues
   - Request for Information (RFI) to elicit public input on methodological issues
3. COA and PPI Development
   - Core Sets of Clinical Outcome Assessments
   - Public Input on diseases and domains of greatest need or highest priority for development of Core Sets of COAs and priority areas where decisions are preference sensitive and PPI can inform decision making
4. Patient Preference Guidance

ACT for ALS

Public Law 117-79: Accelerating Access to Critical Therapies for ALS Act

Signed into law Dec. 23, 2021

Sec. 1: Short Title

Sec. 2: Grants For Research On Therapies for ALS

Sec. 3: HHS Public-Private Partnership for Rare Neurodegenerative Diseases

Sec. 4: ALS and Other Rare Neurodegenerative Disease Action Plan

Sec. 5: FDA Rare Neurodegenerative Disease Grant Program

Sec. 6: GAO Report

Sec. 7: Authorization of Appropriations

ALSFRS-R COA Tool

- Standardized 12-item questionnaire known as the amyotrophic lateral sclerosis functional rating scale-revised—ALSFRS-R
- A ClinRO tool—clinic staff measure disease severity and level of function
- Four domains: gross motor tasks, fine motor tasks, bulbar functions and respiratory function
- Frequently used to support endpoints for investigative ALS clinical trials
- Tool is in the public domain

Comparability: Study Objectives

- To conduct assessments remotely, study objectives could include:
  - Adaptations to the assessment (e.g., instructions, props, impact on clinical information),
  - Feasibility (e.g., technology, home environment),
  - Validity and reliability evaluation to understand differences in scores with the remote compared to in-person assessment versions
  - Translation, linguistic and cultural adaptations

ISPOR Measurement Comparability of PROMs Good Practices Task Force (July 2020, presentation) When does mode of data collection matter? Updated and expanded recommendations for collecting PRO Measures electronically in clinical trials. https://www.ispor.org/docs/default-source/task-forces/ispor-_comparability-of-proms-webinar_final_29jul2020-citations.pdf?sfvrsn=8b720de2_0 ; Eremenco S, et al., Patient-Reported Outcome (PRO) Consortium translation process: consensus development of updated best practices. J Patient Rep Outcomes. 2017;2(1):12.

COA Comparability: Study Design & Implementation

- Engage patients/advocates as research partners
- Pilot study
  - Allow for an iterative qualitative modification and evaluation phase
- Comparability study
  - Evaluate inter- and intra-rater reliability for in-person vs. remote assessment
  - Evaluate assessment scores cross-sectionally and over time

Montes, J., Eichinger, K.J., Pasternak, A. et al. A post pandemic roadmap toward remote assessment for neuromuscular disorders: limitations and opportunities. Orphanet J Rare Dis 17, 5 (2022).

Methodological Topics of Interest

Topics

- Computerized Adaptive Testing (CAT)
- Diversity and Inclusion
- Collection of PRO Data from People Who Have Visual Impairments or Are Unable to Read
- Social Media Data as an Input for Generating COAs
- Anchor-based Approach: Does One Size Fit All?

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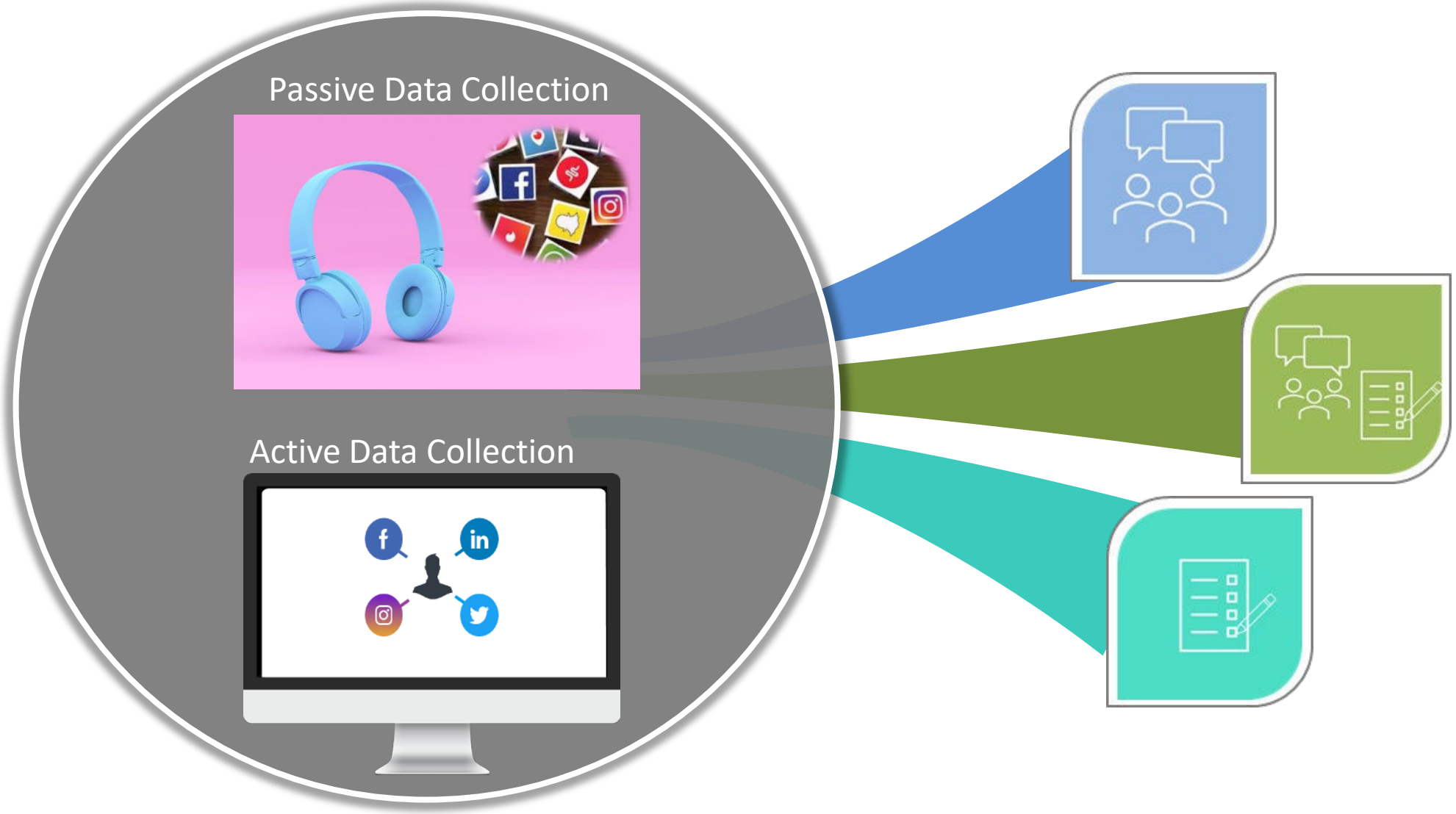
Laura Lee Johnson [recorded]

Director, Division of Biometrics III, Office of Biostatistics

Office of Translational Sciences, CDER

SOCIAL MEDIA DATA AS AN INPUT FOR GENERATING COAS

Use of Social Media for Data Collection



STILL LEARNING

- Hypothesis generation
- Signal detection
- Supplement to Traditional Research

Considerations for Use of Social Media

CHOOSE AN APPROPRIATE RESEARCH DESIGN

CAREFULLY SELECT SOCIAL MEDIA SOURCE

USE APPROPRIATE METHODS TO COLLECT AND ANALYZE DATA

ASSESS DATA QUALITY

PROTECT PRIVACY

ANCHOR-BASED APPROACH: DOES ONE SIZE FIT ALL?

Meaningful Treatment Benefit

- Anchor-based approach is a useful method for understanding what types of COA score differences (including changes) are meaningful to patients
  - Not a one size fits all
  - Requires consideration for critical assumptions made by anchor-based approaches
- Other methods could be used in addition to or instead of anchor-based approaches
- Anchor-based approaches may not be needed
- Anchor-based approaches may not be feasible

When Anchors May Not Be Needed

- Motivation: Often see anchor-based methods proposed to interpret single item-based endpoint results
- Question: Does it make sense to use a single item anchor to interpret another single item COA?
  - It depends…
- Example: a simple ordinal rating of worst pain severity in the past 24 hours
  - Response options: none, mild, moderate, severe
- If a COA produce score(s) that are easy to interpret in terms of patients' experiences, anchors may not be needed
  - Need evidence to justify "easy to interpret in terms of patients' experiences"
  - How closely does the measured concept of interest correspond to the patients' experiences?
  - How simple or familiar is the COA's metric?
  - Evidence from qualitative data

When Anchors May Not Be Feasible

- Example: An endpoint(s) based on events within minutes, hours, days
  - Does it make sense to anchor?
- Example: A prophylaxis proposal, patients may not have symptom at baseline, any change is considered worsening
  - What is considered meaningful? No change?
  - Is this more about tolerability?
  - What would be an appropriate anchor?
- Globally small sample size
  - Limited interpretation of anchor data, especially coupled with missing data
  - Qualitative data important

Example in Rare Disease Drug Development

- NDA 214662 (maralixibat); approved on September 29, 2021
- Treatment of cholestatic pruritus in patients with Alagille syndrome (ALGS) 1 year of age and older
- ALGS is a rare, autosomal dominant, multi-organ disease
  - Incidence of 1 in 30,000 to 1 in 70,000
  - Pruritus is a severe and disabling symptom in patients with ALGS
  - Physical manifestations range from scratch marks, excoriations, and scarring due to persistent and unrelenting pruritus

Labeling: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/214662s000lbl.pdf
Integrated review: https://www.accessdata.fda.gov/drugsatfda_docs/nda/2021/214662Orig1s000IntegratedR.pdf

NDA 214662: Section 14 of Labeling

- Trial 1: An 18-week open label treatment period; a 4-week randomized, double-blind, placebo-controlled drug-withdrawal period; a subsequent 26-week open-label treatment period; and a long-term open-label extension period
- Given the patients' young age, a single-item ObsRO was used to measure patients' pruritus symptoms as observed by their caregiver twice daily (once in the morning and once in the evening) on the Itch Reported Outcome Instrument (ItchRO[Obs])
  - 5-point ordinal response scale, with scores ranging from 0 (none observed or reported) to 4 (very severe)

Table 3: Weekly Average of Worst Daily ItchRO(Obs) Pruritus Severity Scores in Trial 1

	Maralixibat (N=13)	Placebo (N=16)	Mean Difference
Week 22, Mean (95% CI)	1.6 (1.1, 2.1)	3.0 (2.6, 3.5)	
Change from Week 18 to Week 22, Mean (95% CI)	0.2 (-0.3, 0.7)	1.6 (1.2, 2.1)	-1.4 (-2.1, -0.8)

Results based on an analysis of covariance model with treatment group and Week 18 average worst daily pruritus score as covariates

Labeling: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/214662s000lbl.pdf

NDA 214662: Meaningfulness of Treatment Benefit

- Limitations of Applicant's quantitative anchor-based analyses
  - Anchors either had no recall period or had a recall period not specific to the randomized withdrawal period
  - Various anchor-based analyses at varying timepoints which included ObsRO data from open-label period
- Challenge: how to interpret meaningfulness of treatment benefit when no appropriate anchors?
- Regulatory flexibility—Anchor-based analysis not needed
  - Large and consistent treatment effect across multiple pruritus endpoints of interest

Integrated review: https://www.accessdata.fda.gov/drugsatfda_docs/nda/2021/214662Orig1s000IntegratedR.pdf

NDA 214662: Meaningfulness of Treatment Benefit

Table 17. Percentage of Patients Reporting Worsening Pruritus During the Randomized Withdrawal Period

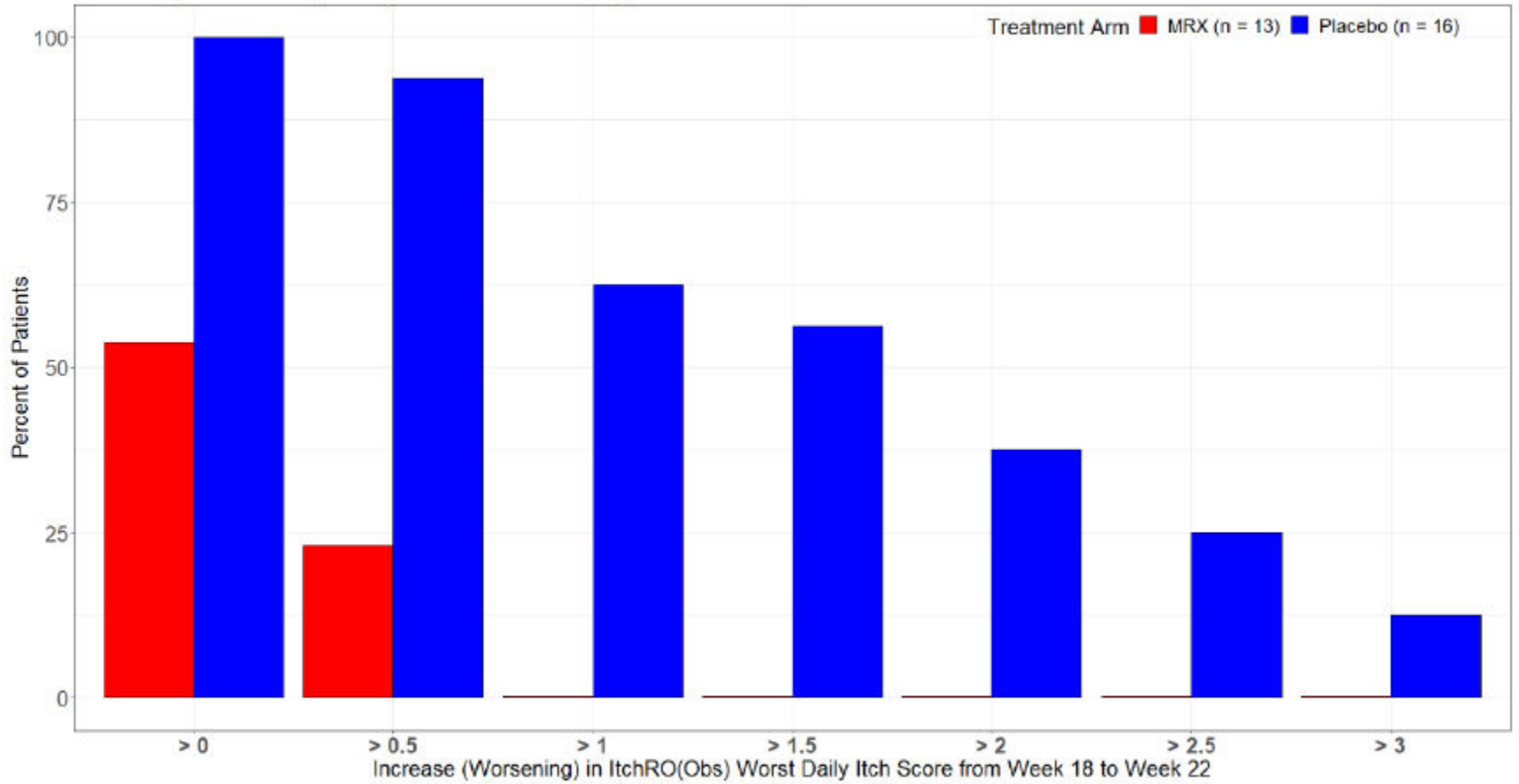
	Percentage of Patients Worsening[1]	
Endpoint	**MRX**	**Placebo**
Weekly average of worst daily ItchRO(Obs) scores	54%	100%
Weekly average of daily average of the morning and evening ItchRO(Obs) scores	69%	100%
Weekly average of morning ItchRO(Obs) scores	66%	100%
Weekly average of evening ItchRO(Obs) scores	54%	100%

Source: PFSS Reviewer's table using the Applicant-submitted dataset adqs2.xpt.
[1] Worsening is defined as any numerical increase in pruritus scores from Week 18.
Abbreviations: ItchRO(Obs), Itch Reported Outcome (Observer); MRX, maralixibat; PFSS, Patient-Focused Statistical Support

Integrated review:
https://www.accessdata.fda.gov/drugsatfda_docs/nda/2021/214662Orig1s000IntegratedR.pdf

NDA 214662: Meaningfulness of Treatment Benefit

Figure 35. Percentage of Patients Who Experienced Various Levels of Increase (Worsening) in Worst Daily ItchRO(Obs) Scores During the Randomized Withdrawal Period



Source: PFSS Reviewer's figure using the Applicant-submitted dataset adqs2.xpt.
Worsening is defined as any numerical increase in pruritus scores from Week 18.
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Integrated review: https://www.accessdata.fda.gov/drugsatfda_docs/nda/2021/214662Orig1s000IntegratedR.pdf

We are Hiring

Looking for COA and quantitative patient preference expertise

All Levels

Email resume to CDEROTSHIRES@fda.hhs.gov and cc laura.johnson@fda.hhs.gov

Panel Discussion with Q&A

Moderated by Michelle Campbell